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ABSTRACT

Presented in two parts are research findings on the postsecondary educational needs of deaf individuals in the state of Maryland. In part I, sections address revelations from national data on the deaf population; the methods used to gather statistics; opinions of vocational rehabilitation counselors, parents, professionals, and deaf individuals regarding postsecondary educational needs; and recommendations for the typical community college program, comprehensive programs. adult basic education, community services, and location for postsecondary programs. Part I appendixes include a map of the geographic distribution of vocational rehabilitation deaf citizens in Maryland, a list of community college level postsecondary programs by state, questionnaire and interview materials, a list of the study's advisory committee, and definitions. Part II focuses on deaf students' manpower needs with sections on the following: the job market as faced by the deaf person, state and national manpower projections for the 1980's, occupations which require training of 2 years' duration or less and are not dependent on hearing, vocational rehabilitation counselors' opinions on desirable occupational training subjects for deaf clients, and recommendations concerning curricular offerings of postsecondary programs for deaf students based on the information. (SBH)

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FEASIBILITY STUDY OF POSTSECONDARY EDUCATION FOR DEAF PEOPLE

1976 - 1977

Howard Community College

Judy Athey, Project Coordinator

Report I: Needs Assessment of Postsecondary Education for Deaf People in Maryland

Report II: Implications of Manpower Research in Postsecondary Education for Deaf People in Maryland

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NEEDS ASSESSMENT OF POSTSECONDARY EDUCATION FOR DEAF PEOPLE

The Division of Vocational Technical Education of the Maryland State Department of Education has funded a project to conduct a statewide feasibility study of postsecondary education for deaf people. The focus of the project is occupational training, especially as offered by two year colleges in Maryland.

This report, an analysis of the postsecondary educational needs of deaf people in the state of Maryland, is part of the project's first phase.

Implications of National Data

The Deaf Population of the United States (Schein and Delk, 1974) describes the results of the National Census of the Deaf Population (NCDP), conducted in 1972. Many of the findings are relevant to an assessment of needs.

A much smaller percentage of deaf people attend college than in the general population. About 12.2% of the deaf people in our region have attended some college, in contrast to more than one-third of the general population. The median income of deaf persons ($5,015 per annum) is over $2,000 short of the median for the general population ($8,188). In view of the positive relation between years of education and income, it follows that increased postsecondary opportunity would help diminish this large gap in personal income.

The employment picture for deaf people also supports the necessity of providing occupational training to deaf people on the postsecondary level. Deaf people are over-represented in many occupations which have poor employment prognoses for the 1980's, and under-represented in

professional, technical, and managerial occupations. One means of changing the situation is through continued education. Schein and Delk state, "Assuming the economy does develop as BLS [Bureau of Labor Statistics] envisions (and the agency does have a good prior record for prognostication), then greater attention must be given to the education and training of young deaf persons" (p. 98).

Projections for postsecondary educational needs of the nineteen-year-old deaf population were made in the NCDP. For 1978, the figures indicate the need for 5,498 deaf nineteen-year-olds in the United States to be trained in technical-vocational programs such as those offered by community colleges. Maryland's share of this national figure is 106. In addition, 2,029 nineteen-year-old deaf people (39 in Maryland) are seen as needing "comprehensive" education, which uses special facilities for those with low educational potential. A new community college program in the state of Maryland might have difficulty meeting both types of needs; this problem will be discussed at more length later in the report.

Distribution of Postsecondary Programs for Deaf Students. According to Rawlings and Trybus (1976), there are 43 programs for hearing impaired students in the United States. A program for the hearing impaired was defined by the following criteria: It must have a minimum of ten full-time students and a director who works at least 50% of the time in the deaf program; it must exist within an accredited postsecondary institution; it must accept students directly from high school; and it must be administered in accordance with the Principles Basic to the Establishment and Operation of Postsecondary Education for Deaf Students of the Conference of Executives of American Schools for the Deaf. The programs which met these criteria serve 2,200 deaf students in the United States.

The presence of Gallaudet College may lead educators to believe that the postsecondary needs of deaf people are being met locally. However, Gallaudet was not intended to serve the needs of most deaf people; it is a national program whose selective admissions criteria make it an impossible choice for a vast majority. Also, since it has a four-year liberal arts curriculum, technical education and occupational training are not available. Gallaudet does not grant Associate of Arts degrees or certificates for those who desire a shorter training time. Alternative postsecondary programs for deaf individuals are needed in Maryland.

The closest community college program to Maryland, located in the Community College of Philadelphia, serves [illegible] hearing impaired students. Currently, there are no programs in Virginia, West Virginia, Maryland, Delaware, or the District of Columbia. Since Delaware's population is densest in the northern end of the state, the program at the Community College of Philadelphia can serve the needs of most of Delaware's deaf people, as well as those in eastern Pennsylvania and southern New Jersey.

The existence of two large population centers in Maryland justifies the establishment of postsecondary education for deaf students here. It is not difficult to grasp the need for such a program. Equal educational opportunity for handicapped people should certainly extend to the post-secondary level. The data gathered for this report attempts to clarify the extent and nature of the need.

Determining the Nature of Maryland's Postsecondary Needs

In assessing the need for postsecondary education among Maryland's deaf population, several factors must be considered. First, there is no registry of deaf persons in the state. Without a measure of the exact number of deaf people, other measures must be used. Second, some commonly

used research methods are not valid when attempted with a deaf population. Telephone surveys, written questionnaires, and interviews present methodological problems because of the nature of the handicap.

Since no agency has comprehensive information on all deaf people, a variety of methods were used to determine their needs for postsecondary education. These methods were devised and discussed with the project advisory committee prior to their implementation.

Sources of needs data included the Maryland State Department of Education's Division of Vocational Rehabilitation, the deaf community, and education agencies including the Maryland School for the Deaf, the Model Secondary School for the Deaf, and Gallaudet College's Office of Demographic Studies.

The Division of Vocational Rehabilitation supplied extensive computerized information on the deaf caseload for fiscal years 1975 and 1976. An analysis of these data provided insight into the location and characteristics of deaf and hard-of-hearing clients of DVR, as well as services being offered them. Eight vocational rehabilitation counselors assigned to deaf caseloads were interviewed about the needs of their caseloads and other issues related to postsecondary education. These counselors also retrieved information from their files on the location of their clients' training services during the past two years.

The Maryland School for the Deaf, the Model Secondary School for the Deaf, and Gallaudet College's Office of Demographic Studies summarized numbers of school-aged population being served and sizes of recent graduating classes. The Maryland School for the Deaf assisted the study by providing information on the career aspirations of its current high school students. In addition, a questionnaire was administered to parents

of M.S.D.'s high school students to obtain input from parents of deaf children.

Information from the deaf community included 106 interviews of deaf individuals from all over the state. These interviews were conducted by deaf people and by hearing people who sign proficiently. Although the sample is not a random one (interviewers made the contacts themselves), an effort was made to interview subjects who varied in age, education, occupations, and geographic location.

The Deaf Population in Maryland. Based on categories and prevalence rates calculated in the 1972 National Census of the Deaf Population (Schein and Delk, 1974), the population of deaf individuals is shown in the following table, supplied by the Office of Demographic Studies of Gallaudet College. "Significant Bilateral Loss" refers to hearing losses "in both ears, the better ear having some difficulty hearing and understanding speech." "Prevocationally Deaf" refers to those individuals who became deaf (i.e. unable to hear and understand speech) before age 19. (Schein and Delk, 1974, p. 133). The number of deaf people in Maryland is 35,208 but incidence rates by age are not available.

Table 1

ESTIMATES OF THE NUMBER OF PERSONS IN MARYLAND WITH HEARING IMPAIRMENTS

Age	Total Population	Hearing Loss	
		Significant Bilateral Loss	Prevocationally Deaf
Under 5 years	281,000	700	100
5 to 17 years	1,005,000	8,600	1,900
18 to 44 years	1,640,000	19,300	2,300
45 to 64 years	832,000	37,300	1,900
65 years and over	340,000	59,000	2,100

Data on school-aged hearing impaired children in Maryland was obtained from the Office of Demographic Studies' survey of educational programs in Maryland. With three local education agencies not reporting (Carroll, Dorchester, and St. Mary's counties), the figure given is 1,290. This number differs from the 1,900 prevocationally deaf school-aged figure cited in Table 1, and there are several possible explanations for the discrepancy. In addition to the above local education agencies not reporting, there may be other agencies whose record-keeping does not show concise information on hearing loss. The current controversy regarding "labelling" of handicapped children may serve to obscure some data. As an invisible handicap, deafness often goes undetected during early childhood. Also, the 1,900 figure includes the multihandicapped deaf population, who may be receiving services other than public school education.

The two largest secondary programs for deaf students in the Maryland-Washington, D.C. area are located at the Maryland School for the Deaf (M.S.D.) in Frederick and the Model Secondary School for the Deaf (M.S.S.D.) in the District of Columbia. These two programs graduate potential community college students every year. Total numbers of graduates of the two schools are shown in Table 2.

Table 2

RECENT GRADUATES OF THE M.S.D. AND THE M.S.S.D.

Year	Number of Graduates, Both Schools
1974	71
1975	53
1976	35
1977 (projected)	67
Average:	57

These numbers represent the minimum number of annual deaf high school graduates. In addition, a growing number of local public school programs will be graduating hearing impaired students from secondary schools. It must be noted that the M.S.S.D. serves a five state area (Maryland, Virginia, West Virginia, Delaware, Pennsylvania, plus the District of Columbia). However, since no community college has an established program for deaf students in Virginia, Delaware, West Virginia, Maryland, or the District of Columbia, a high quality program located in Maryland would probably attract some of the M.S.S.D.'s out-of-state graduates. According to several vocational rehabilitation counselors, many young people would prefer a program closer to home than those currently available. Of the 1976 graduates of both the M.S.D. and the M.S.S.D., three-fourths attended a postsecondary program of some kind. This may be an unusually high proportion of a graduating class, however, and might not be maintained as a continuing trend.

Gallaudet College anually admits approximately 150 to 200 students to its preparatory class, a pre-freshman year of remediation. According to Gallaudet's Director of Admissions, Dr. Bernard Greenberg, about 20% of the class, or 35 to 40 students, do not enter the freshman class for a variety of reasons. Some of these students stay in the Maryland area and are prime candidates for a two year program. They may choose to enter an occupational training program at a community college, or they may take a transfer program from which they could enter Gallaudet or the National Technical Institute for the Deaf.

Education. Because of the language handicap which deafness imposes (Vernon, 1971), deaf people have a lower reading level than that of the general population, despite normal intelligence. The average reading level

for 1975 and 1976 graduates of the M.S.D. and the M.S.S.D. is grade 5.5. This statistic compares favorably with national data on reading level from a 1971 study by the Office of Demographic Studies (ODS, 1972). In this study, the reading levels for 17, 18, and 19-year-old deaf students were averaged for a resulting grade score of 4.2. A more in-depth look at the implications of the reading problem for community colleges will be included in a later report describing various postsecondary programs for deaf students throughout the country. For the purpose of assessing needs, however, it is useful to know that local graduates of two large secondary schools are achieving at somewhat above the national average.

The Vocational Rehabilitation Caseload

The Maryland State Department of Education's Division of Vocational Rehabilitation supplied data on hearing impaired cases served by the Division during fiscal years 1975 and 1976. Clients of vocational rehabilitation are not necessarily typical of the general deaf population. However, The National Census of the Deaf Population found that slightly more than half of the deaf population has used the services of vocational rehabilitation at one time or another. Two-thirds of deaf people are aware of the agency and its function (Schein and Delk, p. 87). Since one of the agency's functions is to enable handicapped people to acquire occupational training, it is a source of possible referrals and would play a major consumer's role in a postsecondary program for deaf students.

Unless otherwise specified, data to be cited is based on clients classified as deaf, speaking or non-speaking, who did not have mental retardation or emotional disturbance listed as an additional disability. Although there are always exceptions among handicapped people, it was felt that in almost all cases these individuals would have difficulty functioning

in a community college setting without extensive supportive services in addition to those needed by deaf people with no additional handicap.

There were 1,634 deaf clients served during this period. An additional 128 deaf clients were classified as mentally retarded and/or emotionally disturbed.

Baltimore City had the largest number of cases (398) of any of the political subdivisions in the state. Baltimore City and Baltimore County's combined cases came to a total of 469.

Montgomery and Prince George's county combined had a caseload of 435. These two counties had the largest numbers of VR clients among Maryland's counties. Data was not obtained from Washington, D.C., which has a separate VR agency, but there are undoubtedly a large number of cases there as well.

As would be expected, the largest numbers of VR clients are located in the population centers of the state. The exception to this pattern is Frederick County, which has a relatively large number of clients (148) due to the presence of the Maryland School for the Deaf.

A map showing the Distribution of VR clients in the state is included in this report (Appendix A).

In addition to the deaf clients served by VR, there are 1,255 hard-of-hearing clients who were served during the same period. These clients can benefit from the same support services used by deaf clients, although many of them will not use all of the services. For example, not all hard-of-hearing people would want or need the use of an interpreter, but virtually all could benefit from a notetaker so that they could attend visually to the speaker's face. Counseling and faculty orientation to hearing loss are other services which would benefit the large numbers of hard-of-hearing clients.

Among deaf clients, 51% were males and 49% were females during the 1975 and 1976 fiscal years.

The ages of deaf clients were also computed. Fifty percent of the deaf clients were of ages 18 through 30. This high proportion may be related to the unemployment rate among deaf people of this age group, which is higher than that of other age groups (Schein and Delk, 1975, p. 76). Age distribution of vocational rehabilitation clients is shown in Table 3.

Table 3

AGES OF DEAF VOCATIONAL REHABILITATION CLIENTS
FISCAL YEARS 1975 AND 1976

Age	Number of Clients	Percentage
0-18	67	4
18-30	823	50
31-45	313	19
46-60	224	14
60 or older	207	13
Total	1,634	100

The large number of cases age 18 to 45 could result in a substantial number of referrals from VR counselors to a community college program for deaf students within the state. The National Census of the Deaf Population found that, of deaf people who sought assistance from vocational rehabilitation, half were seeking opportunities for education or training (Schein and Delk, p. 87). If this desire for training is as strong in Maryland, there could be as many as 500 clients aged 18 to 45 in the state who need

some kind of postsecondary education. This figure does not include the portion of the deaf population not served by VR during fiscal years 1975 and 1976.

The validity of the data on years of education of clients as reported by the computer is questionable. A large number of cases were either not reported (118) or were reported as zero years of education (389). Although some of the cases may never have attended school, it is unlikely that 389 of the total 1,639 deaf cases received no education. Another problem encountered was that several clients who attended two year colleges were listed as having had a very limited previous education.

Despite these limitations, the results are interesting. Discounting the large number of "zero education" clients reported, the median of years of education was computed. The resulting figure of 11 years is very close to the national figure for median years of education among deaf people (11.1 years).

The Division of Vocational Rehabilitation purchases services so that clients can have access to postsecondary education which will prepare them for their vocational objective. The VR counselor can classify most types of training received into one of several categories: two year college, four year college, private vocational school, public vocational school, other academic program, business school, rehabilitation center, tutorial, Maryland Rehabilitation Center, personal/vocational adjustment training, or on-the-job training.

The following chart shows the number of clients who received each category of training.

Table 4

VR CLIENTS IN TRAINING, FISCAL YEARS 1975-1976

Type of Institution	Number of Clients (f.y. 1975 and 1976)
Two year college	23
Private vocational school	30
Public vocational school	11
Business school	7
Four year college	129
Maryland Rehabilitation Center	51
Rehabilitation Center, other than Maryland	18
Personal/vocational adjustment	14
Tutorial	0
Other Academic	27
Total	310

The absence of a community college program in Maryland is reflected by the small number of clients who attended two year colleges: 23 clients or 1.4% of the total deaf cases. More deaf clients attended private vocational schools than community colleges.

Three times the number of 2-year college clients were served by a rehabilitation center (69 clients). Several counselors working with deaf clients have stated that some of their clients had gone to a rehabilitation center because there was no local community college program for them. Counselors were asked to count the number of their recent deaf clients who

could have benefited from a new postsecondary program in Maryland. Their reports indicated that more than 100 clients could have used the services of such a program during the past two years.

Many of the curricula offered by business schools and private vocational schools are also available at community colleges. When the figures for these training placements are combined with the number of clients attending a two year college, the total is 71. Certainly some of these clients could benefit from a community college program.

The largest number of clients in training were four year college students. Maryland's proximity to Gallaudet may contribute to high attendance among Maryland's deaf people. Also, it is possible that those qualified to go to Gallaudet are encouraged to seek assistance from Vocational Rehabilitation and may do so in disproportionately high numbers.

Since the computer could not provide information on locations of training programs attended by clients, counselors were also asked to supply this information on their caseload for the past two years (approximately January 1975 to present). The totals do not coincide with the totals given by the Division's computer since a large number of deaf clients have counselors who are not trained as counselors for the deaf. For example, only 48 of the 129 four year placements are accounted for in counselor's data. However, some of the data is useful. The four most-used postsecondary educational institutions were Gallaudet, the National Technical Institute for the Deaf in Rochester, New York, the Maryland Rehabilitation Center, and the St. Paul Technical-Vocational Institute in St. Paul, Minnesota.

Besides these institutions, a wide variety of training sites were named, with small numbers of clients in each location. These sites included public and private vocational schools and a few community colleges.

According to one vocational rehabilitation counselor who had placed some clients in such schools, these cases are often clients who need or want training very badly, but who could not attend programs far from home. The Division of Vocational Rehabilitation usually provides funds for an interpreter and tuition fees so that the client can attend.

Limited information was available on the occupations of clients after training. The coding used is based on the Dictionary of Occupational Titles, so that specific occupations are named. In this study, occupations were listed for those clients who attended two year colleges, four year colleges, private vocational schools, public vocational schools, and the Maryland Rehabilitation Center. Fifty-nine percent of those in training in all of these categories did not have occupations reported for after their training. Many of these clients were still in training at the end of the fiscal year, or for one reason or another, their cases were not closed.

Of the remaining 41% of clients whose occupations after training were reported, most were placed in clerical positions of some kind. Half of those who attended a four year college and then entered the work force found positions in professional and technical occupations. The remainder fell into the same pattern as those educated in other educational institutions: most were clerical workers, and somewhat smaller numbers were in craftsman and operatives occupations. It is difficult to draw conclusions about placement from this data, since the data does not tell how many of the clients completed the courses of study taken at each location.

People's Opinions About Needs

In addition to data on numbers of people, the opinions of several groups of people were sought regarding the needs for postsecondary education

among Maryland's deaf population. Vocational rehabilitation counselors and deaf people from all over the state were interviewed, and parents of high school students at Maryland School for the Deaf were sent a questionnaire.

Eight vocational rehabilitation counselors in Maryland have been identified as counselors working with deaf caseloads. These counselors were interviewed regarding the training needs of deaf people in Maryland. Two of the counselors had recently left the service of The Division of Vocational Rehabilitation, but because both had served deaf caseloads for two years or more, they were interviewed. Interviews were conducted individually, in most cases at the office of the VR counselor.

Each counselor reported on the needs of his or her individual caseload only, not on the statewide postsecondary needs of deaf people. Thus the regional needs of VR clients can be analyzed according to their counselor's perceptions.

"What are the training needs of your caseload?" Counselors responded to this question differentially by region. Three counselors in the Baltimore metropolitan area cited a training facility similar to the Maryland Rehabilitation Center as the top priority need, preferable to a community college program. All three mentioned a need for instructors who were well trained in communicating with deaf people in such a facility. Other needs included personal adjustment training and apprenticeship opportunities for clients.

Counselors representing Prince George's, Montgomery, and Anne Arundel counties felt that their caseloads could benefit most from a community college program. Clients who were mentioned as possible community college candidates were Gallaudet drop-outs, printers who may need retraining, students who may want to transfer to a four year institution, and hard-of-hearing clients who need counseling services. The St. Paul Technical-Vocational Institute

program for deaf students was mentioned as a model for a community college setting by all three counselors. Although St. Paul TVI is not located in a community college, the services provided there are similar to support services offered in a community college.

The western Maryland caseload includes a large number of young deaf clients who are registered as VR clients while attending the Maryland School for the Deaf. In addition, there is a regular caseload of clients from Frederick, Washington, Alleghany, and Garrett counties. The counselor from this region emphasized the importance of providing a wide range of community college opportunities for deaf students, and expressed a desire to have an apprenticeship program available for deaf students.

Because of the low incidence of deafness and the sparse population of the eastern shore, few deaf clients have been referred to the counselor for the deaf in this region. The few cases he has received have been multihandicapped individuals, and his recommendations reflect this fact. Emphasis for such clients should be on independent living skills and socialization training.

"Where in the state should a community college program or programs be located?" All counselors stated that one or both of the metropolitan areas should have a community college with a program for deaf people. One counselor suggested a centralized location for services, with cooperative programs in community colleges and other vocational-technical programs throughout the state.

"What support services should a community college have so that deaf students could be guaranteed quality education?" All counselors mentioned a strong counseling component as a vital part of a community college program. Interpreters were recommended by all counselors except the one who served a few very low-functioning clients.

The third most-mentioned service was a remedial program in language, reading, math, consumer information, and or independent living skills. The implication of this recommendation is that there would be some special classes for deaf students, this is a common practice in community college programs for deaf students. Most two year programs for deaf students in the United States do offer such courses (Rawlings and Trybus, 1976).

Tutors were mentioned by over half of the counselors as a desirable feature for a program. Other services recommended by one or more counselors were notetaking, vocational evaluation, faculty orientation to deafness, sign language classes for hearing people, and audiological services.

"Should students have supervised housing?" Counselor's opinions were divided on this issue. Most counselors felt that some of their clients need it, and one felt that none of hers did. Two counselors suggested the practice used by St. Paul Technical-Vocational Institute of assisting students in finding housing and learning to live on their own for the first semester of students' attendance.

Parents' Opinions

During the interviews, several VR counselors remarked that some of their young deaf clients were in need of two year occupational training, but their parents, for a variety of reasons, would not permit them to go far from home to receive it. Since there is no community college occupational training available in Maryland, some of these clients were unable to attain their full potential, and either accepted positions in unskilled occupations or remained unemployed.

Parental involvement in the decision-making process plays an important

role in the selection of a site for postsecondary programs. To obtain opinions from parents on the needs of deaf students for postsecondary education, the project coordinator attended a meeting of the Maryland School for the Deaf's Parent-Teacher-Counselor Association in Frederick, Maryland. At the meeting, she explained the purposes and goals of the feasibility study and invited parental involvement in the project. Unfortunately, the meeting took place on the day after a flood which devastated downtown Frederick; statewide news coverage of the flood had a substantial negative impact on attendance at the meeting.

Subsequently, a questionnaire was devised to be mailed to parents of M.S.D. students in the advanced department, which serves children of high school age. A letter of explanation preceded the mailing of the questionnaire by several days. Both this letter and a cover letter for the questionnaire were mailed on Maryland School for the Deaf letterhead, with the signature of Dr. David M. Denton, Superintendent of the school. Self-addressed, stamped envelopes were enclosed with the questionnaire to encourage parent participation in the survey.

Copies of the letters and the questionnaire are included in Appendix C. To avoid the problem of infringing on the privacy of parents, they were not asked their names. Parents were asked their county of residence, the age of their deaf child, and if they themselves were hard-of-hearing or deaf. It was assumed that one parent would complete the questionnaire.

Returned questionnaires were analyzed by Ms. Ellen Hankin, a graduate student at Western Maryland College, in partial fulfillment of a graduate course requirement.

The design of the questionnaire posed several difficult problems. First, the diversity of the target population required that questions be worded and

placed in a layout that would be understood by less educated parents but not insulting to more highly educated parents. To assure a reasonable response rate, brevity was extremely important. Explanations of terms and long lists of alternative responses would more than likely intimidate many parents and result in a low response rate. Therefore, the questionnaire was very brief. Problems of ambiguity in two cases resulted from these efforts.

The response rate for the survey was 55%.

In response to the question, "Do you think your child should receive more education after graduation from high school?" 91% answered "yes". This high degree of interest in postsecondary education could be due to a tendency in interested parents to return questionnaires, whereas disinterested parents may tend to discard them. However, there is a strong possibility that parents in general are aware of the need for postsecondary education among their children.

The next question was worded as follows:

"In your opinion, what kind of education should your child receive?

____Basic Education (Language, reading, math, etc.)

____Job Training (vocational-technical)

____4 year College (Bachelor's degree)

____2 year College (Associate of Arts degree)

____How to live on his/her own (Independent living skills)

____Other"

The students who analyzed the responses felt that the omission of the words "after graduation" at the end of the question caused misunderstanding among the respondents. If this is true, it would be impossible to measure to what extent this confusion occurred. Responses indicated that 73% of the parents would like their children to receive job training/vocational-

technical education; 45% favored education in independent living skills; 35% thought that basic education was a need; 28% would like their children to attend a 4 year college; 8% favored a 2 year college; and 5% listed other responses, including graduate school, art school, and remedial work leading to college entrance. The total percentage exceeds 100% because some parents chose more than one response.

The large response in favor of "job training (vocational-technical)" indicates that parents want their children to have some kind of occupational training. Even if the question is ambiguous as to secondary or post-secondary emphasis, it is nonetheless likely that parents who are so strongly in favor of postsecondary education (91%) would be interested in a post-secondary program offering this type of training. The same principle can be stated in relation to training in independent living skills, which might be continued as postsecondary education if the student did not master them upon graduation. Twenty-eight percent of parents aspire to a four year college program for their children. Acutally, only 6.4% of the adult deaf population have achieved four or more years of college (Schein and Delk, 1974, p. 58). Many parents apparently have unrealistic hopes for the futures of their children.

A comparatively small percentage (8%) thought that their children should attend a two year college. Although it is possible that this figure reflects a disinterest in community colleges, it is more likely that the lack of services for deaf students in Maryland's community colleges make them seem like an undesirable placement at the present time. The strong interest shown in vocational-technical education (73% in favor) is in sharp contrast with the lack of interest in two year programs. It is also conceivable that parents of deaf children are not aware of the vocational-technical options available at community colleges.

Answers to the next question in the survey support this idea. Parents were asked, "If you had a choice of college or vocational schools, where would you want your child to attend? Please write the name of your first, second, and third choices of college and/or vocational schools." In designing this question, consideration had been given to listing all possible programs and asking parents to check the institution of their choice. This method was eliminated because, to be fair, it would involve listing every community college and vocational school in Maryland, as well as schools throughout the country which serve deaf students. The list would include the names of at least eighty institutions, and it was feared that parents would tend not to answer it.

The form of the question ultimately used (open-ended first, second, and third choice format) had the same result: parents tended not to answer. Of the total respondents, one-third either did not answer or commented that they did not feel qualified to answer because of their lack of knowledge about available programs.

Of those who did respond to this question, 68% listed Gallaudet College as either a first, second, or third choice. A few respondents who favored vocational-technical education chose Gallaudet, which is a four year liberal arts college. The National Technical Institute for the Deaf was listed as a first, second, or third choice by 42% of those who answered the question. Other responses were widely scattered among many kinds of postsecondary programs.

The large number of responses indicating Gallaudet and the N.T.I.D. reflect parental awareness of these two programs. Gallaudet and the N.T.I.D. are the largest programs for deaf students in the United States and it is

logical that they would be the best known. However, because of their selective admissions criteria, they are not feasible choices for the large numbers of children whose parents indicated them.

There could be several reasons for parents' choosing Gallaudet and N.T.I.D. with such frequency. Some parents may have been anxious to please and therefore wanted to list some kind of program, some may not be aware of the stringent entrance requirements of the two schools, and some may think that these are the only options available to deaf young people. In any case, there is a need for parents to have a greater awareness of post-secondary options for deaf people. A new postsecondary program should include the parents of school aged deaf children in its dissemination of information activities.

The fifth and sixth questions asked related to the child's future career. Parents were asked, "What kind of job would <u>you</u> like to see your child choose for a career?" and "What kind of job would your <u>child</u> like to choose for a career? Responses were varied. For the purposes of this study, the occupations listed were grouped into 3 categories: Group 1 consisted of occupations requiring four years or more of postsecondary education such as teaching and social work; Group 2 were occupations such as craftsmen and office occupations which are best trained for in a 2 year program; Group 3 occupations require no training, as in fast food service and janitorial service.

Twenty-three percent of the parents would like to see their children in fields requiring 4 or more years of postsecondary education, 59% hoped for career choices which required about two years of training, and 4% aspired to occupations which required no training. Twenty percent stated that they would agree with whatever the child wanted, and 13% were undecided about their own aspirations for their children.

According to this data, most parents aspire to occupations for which community colleges provide training. The very low number of parents aspiring to unskilled occupations lends further credence to their desire for continued education for deaf youth.

The career aspirations of deaf high school students, as viewed by their parents, show a slightly more pessimistic picture. The 27% who aspire to Group 1 occupations roughly coincide with the 23% of parents who want this. However, only 37% of parents see their children aspiring to occupations which require two years of training, in contrast with the 59% of parents who have such aspirations. As with their own feelings about their children's future, few parents (12%) think that their children want low skilled occupations. Finally, more than one-third think their kids are undecided.

The final question of the survey asked parents, "Has your child shown any interest in continuing his/her education after graduating from M.S.D.?" Parents answered that 56% had detected some interest on the part of their children; 9% had noticed that their children were not interested; 21% felt that their children were undecided; and 13% did not know how their children felt on the subject.

The fact that more than half of the parents detect an interest on the part of their children is a promising indication for postsecondary education for deaf students.

A Needs Assessment in Baltimore

In May 1975, a meeting was held at the Maryland Rehabilitation Center in Baltimore to assess the city's continuing education needs for deaf adults. The assessment, a cooperative effort of the Baltimore City

Department of Education, Gallaudet College, and the Baltimore Council of Organizations Serving the Deaf, was conducted via the Phi Delta Kappa model. About 50 participants were divided into three groups representing deaf adults, professionals in the field of deafness, and professionals in adult education. About 25 of the participants were deaf.

Top priority was given to the reduction of unemployment, which has obvious implications for postsecondary training programs. The summary of the needs assessment mentions "training in vocational and technical skills, placement, counseling, awareness on the part of employers as to deaf people's abilities, employment application procedures, etc."

Second priority was "'improved communication and interaction between deaf and hearing persons', indicating a need for more opportunities for sign language classes for hearing people, opportunities for meaningful integration, deaf awareness on the part of the hearing community, etc." Access to postsecondary education would help deaf people and hearing people to make progress toward this goal.

Third priority, improvement in language skills, relates to the establishment of adult basic education programs for deaf people.

Interviews with Deaf People Statewide

One hundred six deaf people residing in Maryland were the subjects for interviews concerning their postsecondary needs. One purpose of the interviews was to put the project in contact with deaf people and vice versa. The people interviewed are not a random sample of the deaf population, so generalizations and predictions will be limited. However, the interviews give an idea of the interest among deaf people in postsecondary education and their opinions on the kinds of support services which should be provided.

Often, deaf consumers are not asked their opinions about programs designed for them. In some cases this lack of an attempt to get their opinions may be due to paternalism, but often it is due to constraints of time and money. The interviews are an attempt to avoid this situation.

Copies of the interview forms and written instructions for the interviewers are included in Appendix D of this report.

Interviewers were chosen by geographic locations, signing skill, and dependability. One interviewer lives and works in Hagerstown; one lives and works in Baltimore; two live in Columbia and work in Baltimore; one lives in Anne Arundel County and works in Baltimore; two live in Prince George's County and work in Washington, D.C.; one lives and works in Prince George's County, and one lives and works in Salisbury. In addition, the project coordinator conducted interviews in Baltimore.

Interviewers reported few problems. Several said that some subjects insisted on filling out the form themselves after the questions were explained by the interviewer. Subjects who did this seemed to understand the questions, and their responses were clear. All of the interview forms returned were useable, and there were few unanswered items.

The 106 subjects interviewed ranged in age from 17 to 73, with a median of 31 years and a mean of 34. The group interviewed is older than the average for all community college students in Maryland, whose mean age is 26. Ten of the subjects live on the eastern shore, 6 live in Western Maryland, and the remaining 90 live in the Baltimore-Washington-Annapolis area.

"Do you think most deaf people want more job training, vocational education, or for community colleges to be more open to deaf people in Maryland?" The vast majority of respondents (94.3%) answered yes to this

question. The question was asked to differentiate the respondents' own needs from their perceived needs of deaf people as a group.

"Do you think you might want to go to school to take any kind of courses?" A statement to preface this question was included in the instructions for interviewers, since some people would probably be unfamiliar with the options available at a community college.

93 respondents (87.7%) thought they might want to take courses and 11 (10.3%) were not interested. Two respondents said "maybe". Again, this very large percentage of interested respondents cannot be generalized to the entire deaf population. Interviewers may have tended to choose subjects who were potentially interested in the topic of postsecondary education. Another factor which may have influenced this high degree of interest is the individual attention and explanation afforded by the interview. Normally, a deaf person would not have this advantage in learning about postsecondary education. For example, if a program is established in Maryland, television and radio announcements will not reach deaf people directly. Word-of-mouth is an effective public relations tool for deaf people.

There is no way of knowing how many of these deaf subjects would actually attend a postsecondary program if one were available. However, their expressed desire to take courses in specific subject matter indicates directed interests.

"If yes [i.e. you might want to attend a postsecondary school], what would you take?" The average respondent listed two subjects of interest. Ninety-six percent of the areas of study listed were appropriate for community college level training. A few, such as counseling and social work, require more extended education. The large number of appropriate responses indicate that interviewers were effective in explaining the scope of community colleges' programs.

Almost two-thirds of the areas of interest were in some kind of occupational training or transfer curriculum such as might be offered for a certificate or an Associate of Arts degree. The most frequently listed occupations were clerical, computer-related, mechanic, electronics and skilled craftsman occupations.

Another area of interest was the community-service and credit-free programs usually offered in community colleges. Courses such as art, crafts, tax preparation, TTY repair, and dog grooming were listed as 25.9% of the responses to this question.

"If you are not interested in taking courses, why not?" There were 10 responses to this question. Three people had lost interest in school. Three were trained and satisfied in their work. Three wanted a job immediately, 1 was a shy homemaker, and one failed to see the value of continued education because employers only seem interested in the applicant's experience.

"What services should a hearing college give so that deaf people can go there and be comfortable learning among hearing people?" Of the 99 who responded to this question, 75 respondents listed an interpreter as a necessity of such a program. Forty-six expressed the desire to have teachers who are fluent in sign language, or in some cases, a deaf teacher. Many of these responses noted that an interpreter would be acceptable if a signing teacher were not available.

This particular response is interesting because only two postsecondary programs for deaf students in the United States have a full staff of instructors who are fluent in sign language. These programs are the two national programs, Gallaudet College and the National Technical Institute for the Deaf, the largest programs for deaf students in the world. No

existing community college has a staff which is fluent in sign language, and unless a large national "community" college for deaf students would be established, it is doubtful that this model would be feasible.

The lack of confidence among deaf people in dealing with non-signing hearing people relates to a lifelong struggle in communicating with them. Some of the deaf respondents noted the need for the hearing teachers and students' sensitivity to their handicap. One called for "deaf awareness sessions to inform the hearing about deaf people's needs...so they can laugh with the deaf--not at them." Concern about being shunned by hearing students and staff was expressed in several instances. One interviewer stated, "In interviewing the deaf people in the Baltimore area, I found the suggestion of a community college something new to them. The general reaction was, 'With hearing people?!' There was no objection to hearing people. The concern seemed to center around the teacher, with questions such as, could the teacher understand them, would they understand their teacher? Would the teacher have patience, answer questions, find time to explain what they might not understand or ignore them and go on to the next assignment?"

Some deaf people noted that sign language classes and an orientation to deafness for hearing people are important support services when deaf people are integrated into classes with hearing people. Few respondents (4%) mentioned a need for counselors, despite the fact that counselors can help deaf and hearing people adjust to each other.

In designing the support service system for a program for deaf students, these concerns must be taken into careful consideration. A community college which has not adequately informed its hearing staff and students of the needs of deaf people will probably be unsuccessful in attracting deaf students.

Other support services listed by deaf respondents included notetakers, captioned films and other captioned visuals, and tutors.

"Where should a program be located so that most deaf people could benefit?" Of the 97 useable responses, 89 (91%) wanted a program to be located in the respondent's own county or within a short driving distance. Two respondents suggested one program in the Baltimore metropolitan area and one in the D.C. metropolitan area. Two others suggested the middle of the state, and 4 said that the location really did not matter to them.

Summary and Recommendations

There is a need for increased postsecondary educational opportunities for deaf people in Maryland, particularly in vocational-technical education. The need for a program can be explained on the basis of the underemployment of deaf persons, their below-average economic status, and their long denied civil right to equal educational opportunity.

However, need does not necessarily equate with the demand for services. Is there a market for postsecondary education among deaf people? How many people can be expected to attend?

The table on the following page summarizes the population data described in this report.

The population data per se does not reveal much about number of deaf people who would be interested in postsecondary education. However, the deaf caseload of Vocational Rehabilitation is a likely source of potential students. If a postsecondary institution can show that its support services for deaf students are adequate, it appears that VR could refer as many as 50 clients per year. If an agreement can be worked out with Gallaudet and NTID regarding transfer programs, some of Gallaudet's drop-outs may choose a two year program. Young deaf people often find this area attractive because of the large number of deaf peers at Gallaudet, and because of the

Table 5

SOME MEASURES OF MARYLAND'S DEAF POPULATION

Category		Number
Deaf people[1] aged 18-64 years		56,000
Prevocationally deaf people[2] aged 18-64 years		4,200
Recommended number of candidates for Basic Education Programs	over	2,326
1978 projected number of 19-year-olds needing vocational-technical training in Maryland (from 1972 NCDP)		106
Deaf clients of Vocational Rehabilitation, fiscal years 1975 and 1976		1,634
Hard-of-hearing clients of Vocational Rehabilitation, fiscal years 1975 and 1976		1,255
Number of deaf Vocational Rehabilitation (1975-1976) probably seeking training (based on 1972 NCDP Survey)		784
Clients recommended for occupational training by Vocational Rehabilitation counselors working with deaf caseloads, over two years time	over	100
Annual graduates from M.S.S.D. and M.S.D.	Approx.	57

[1] Those with significant bilateral loss, including prevocationally deaf.

[2] Those who became deaf before 19 years of age.

socio-cultural benefits offered to deaf people in the D.C. area. High school graduates who need two years of postsecondary education and who want to stay in Maryland will be attracted to an in-state program. Many hard-of-hearing people in the state might be attracted to a college community which is sensitized to the implications of their handicap. In addition, parents of deaf high school aged students support continued education and vocational-technical training for their children.

The high potential for interest in this area does not mean that there would be an enrollment of more than 50 students during the first year of a new community college program for the deaf. Only 12% of the post-secondary programs for deaf students in the United States have enrollments of more than 50 students. Two-thirds of the total programs have been in existence for five years or less (Rawlings and Trybus, 1976). It is probable that as programs establish good reputations, their enrollment grows. However, Maryland's situation indicates the potential for an enrollment of 50 students within several years of the establishment of a quality program. The factors which contribute to the success of post-secondary programs for deaf students will be analyzed in the next phase of the feasibility study.

Like their hearing counterparts, deaf people need different kinds of training depending on individual needs, abilities, and interests.

The Typical Community College Program. Many deaf people can function quite well when integrated with hearing students in a community college setting. Most community colleges serving deaf students use a model in which support services are provided so that students can attend classes with hearing students. The major emphasis in curriculum of most schools is technical-vocational in nature.

Deaf students entering a community college program usually take a special preparation course or combination of courses which are not offered to the hearing students, and which last up to one year.

For the rest of their courses, interpreters are used. Tutoring, notetaking services, vocational development services, personal counseling, vocational placement, and socio-cultural activities are also available in most programs. Manual communication training is usually offered to students and staff of the community college (Rawlings and Trybus, 1976).

Characteristics of successful deaf community college students will be described in the next report, as will admissions criteria of the college serving them. This information will assist in identifying the target population of such a program in Maryland.

Comprehensive Programs. There is an often overlooked, large group of deaf people who cannot compete in an integrated setting for a variety of reasons.

One problem is literacy. Well-known studies in the field of deafness have found that 30% of deaf students 16 years of age or older are functionally illiterate (Mindel and Vernon, 1971, p. 91). These students cannot be brought up to an appropriate reading level by a semester or two of remediation.

Another problem is communication. For example, many VR clients in Baltimore City do not have adequate manual communication skills to communicate even with those who do know sign language. Such people would be lost in a typical community college program for deaf students.

A third problem relates to socialization in a broad sense. These deaf individuals may be socially isolated and immature. They are often uninformed about the world of work, career options, how to fill out an

application, the importance of attendance, punctuality, and cooperation on a job. It must be emphasized that by and large these individuals are not mentally retarded. Often their problems result from poor education and an imposed lifelong lack of communication with the people around them.

This group of deaf people is difficult to serve, and consequently there are few programs which make the effort. They need self-contained classes taught by teachers who are very skilled in manual communication and who have experience in teaching deaf people. Vocational training should not be of a very technical nature, and independent living skills should be an integral part of the curriculum. In-depth evaluation and work adjustment training must be available. Some students will need a residential facility for the duration of their training. An on-the-job training program would be an essential component of postsecondary education for these people.

This type of program, described by Schein and Delk (1974) as a "comprehensive" postsecondary treatment, is the type of program which might be located at the Maryland Rehabilitation Center in Baltimore. MRC serves a wide variety of handicapped people, but instruction is over the head of deaf adults with poor educational backgrounds. Many of the vocational offerings at MRC have reading level requirements which prove prohibitive to those truly in need of comprehensive training. Deaf clients can only choose between food service and janitorial training and the duration of training is usually limited to about three months. In many instances, interpreters are not provided in the classrooms.

A new personal adjustment training program functioning in cooperation with MRC is being administered by the Baltimore League for Crippled Children and Adults. This is a promising beginning in providing truly comprehensive services to those who need them. However, there is much work left to be done in this facet of postsecondary education for deaf people.

Adult Basic Education. Because of the important role that reading plays in everyday life, a low reading level can affect the deaf person throughout adulthood. There is a need for multi-level Adult Basic Education for deaf people throughout the state.

According to the National Census of the Deaf Population (Schein and Delk, 1974), 53% of deaf people left school before the twelfth grade. These people are likely consumers for Adult Basic Education or General Education Development programs. Applying this proportion to the census data for Maryland, there are at least 2,226 prevocationally deaf people 18 to 64 years of age who could benefit from A.B.E. or G.E.D.

Even more important than years of education is the achievement level of deaf people. Large numbers of deaf people who have completed 12 or 13 years of education have lower verbal and mathematical skills than that of the general population. Like the hearing population who need A.B.E. or G.E.D., these deaf people do not necessarily want it. However, the previously mentioned needs assessment of deaf adults in Baltimore City placed A.B.E. at third priority for continuing education. (First priority was reduction in unemployment, and second was improved communication and interaction between deaf and hearing persons.) Such a high priority for adult education indicates that the deaf community recognizes its importance.

Class size for deaf students in A.B.E. or G.E.D. programs should be much smaller than for hearing adults, and it is important that the teacher

of these programs for the deaf be trained and experienced teachers of deaf people. Problems in learning and methods used in teaching English to deaf people are so unique that the use of an interpreter is an inappropriate way to meet this need. The Center for Continuing Education at Gallaudet College has developed materials for use in these classes and will provide expert assistance free of charge to agencies willing to establish A.B.E. and G.E.D. classes for deaf people.

Community Services. The state of Maryland is very fortunate to have in its community colleges community services programs which strive to serve deaf people. Many colleges offer interpreting services in credit-free courses attended by deaf people. Sign language classes and some limited interpreter training are offered at many locations. Several deaf awareness conferences have also been sponsored by community service departments. Almost without exception, community service personnel have been responsive to requests and suggestions from professionals in the field of deafness.

Deaf people and professionals who serve them should take advantage of this resource as a means of educating the public as well as educating deaf people.

Locations. Many factors must be considered before final recommendations are made regarding the location of a postsecondary program for deaf students. For example, interest on the part of the community college to be recommended is a necessity. An analysis of the community resources outside the college may have an effect on which site is most desirable. Finally, existing community college programs across the nation may have some worthwhile advice on the selection of the college or colleges which will serve deaf people.

Therefore, the recommendations stated here are preliminary ones, based

on the Manpower Analysis Report and this Needs Assessment. They may be changed as other factors are considered.

Based on information collected to date, it is recommended that the location for a community college program be near the D.C. metro area, to best serve the most deaf people needing this kind of service. The college should ideally have a wide range of occupational training offerings, as well as a transfer program.

A well organized comprehensive postsecondary educational program should be located in the Baltimore metropolitan area, to best meet the needs of deaf people in that area.

Adult Basic Education, General Education Development, and Community Service activities for deaf people should be located at all community colleges. These institutions must continue to make an effort to meet the needs of local deaf residents.

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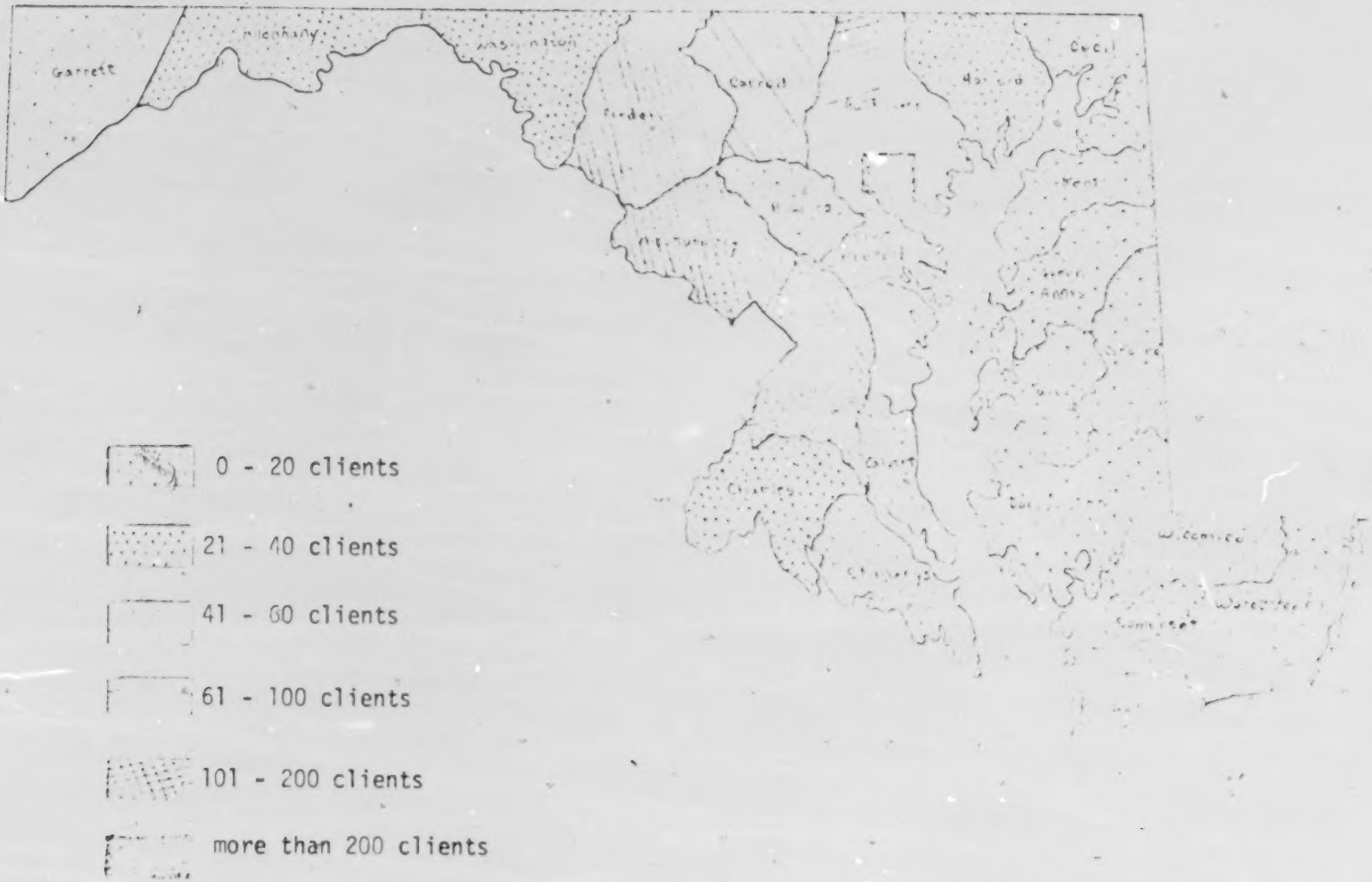
APPENDIX A

Geographic Distribution of Vocational Rehabilitation's Deaf Clients in Maryland, 1975-1976



APPENDIX B

Geographic Distribution of Community College and Vocational Center Programs for Deaf Students

Rawlings, B.W. and Trybus, R.J., 1976

APPENDIX B (Cont'd.)

Community College Level Postsecondary Programs by State

California

El Camino College
Torrance, California

Golden West College
Huntingdon Beach, California

Los Angeles Pierce College
Woodland Hills, California

Ohlone College
Fremont, California

Pasadena City College
Pasadena, California

Riverside City College
Riverside, California

San Diego Community College
San Diego, California

Valley Vocational Adult School
Industry, California

Colorado

Community College of Denver
Denver, Colorado

Florida

St. Petersburg Junior College
Clearwater, Florida

Georgia

Floyd Junior College
Rome, Georgia

Idaho

College of Southern Idaho
Twin Falls, Idaho

Illinois

Northern Illinois University
DeKalb, Illinois

Waubonsee Community College
Sugar Grove, Illinois

William Rainey Harper College
Palatine, Illinois

Iowa

Iowa Western Community College
Council Bluffs, Iowa

Kansas

Johnson County Community College
Overland Park, Kansas

Kentucky

Jefferson State Vocational-Technical School
Jeffersontown, Kentucky

Louisiana

Delgado Junior College
New Orleans, Louisiana

Michigan

Charles Steward Mott Community College
Flint, Michigan

State Technical Institute and Rehabilitation Center
Plainwell, Michigan

Minnesota

St. Paul Technical-Vocational Institute
St. Paul, Minnesota

New Hampshire

New Hampshire Vocational Technical College
Claremont, New Hampshire

North Carolina

Central Piedmont Community College
Charlotte, North Carolina

Ohio

Columbus Technical Institute
Columbus, Ohio

Oregon

Portland Community College
Portland, Oregon

Pennsylvania

Community College of Allegheny County
Monroeville, Pennsylvania

Community College of Philadelphia
Philadelphia, Pennsylvania

Tennessee

Chattanooga State Technical Community College
Chattanooga, Tennessee

Texas

Eastfield College
Mesquite, Texas

Lee College
Baytown, Texas

Tarrant County Junior College District
Fort Worth, Texas

Washington

Seattle Community College
Seattle, Washington

Wisconsin

North Central Technical Institute
Wausau, Wisconsin

Canada

George Brown College of Applied Arts and Technology
Toronto, Ontario, Canada

Vancouver Community College
Vancouver, British Columbia, Canada

APPENDIX C

Questionnaire Materials, Maryland School for the Deaf

Parent Survey

MARYLAND SCHOOL FOR THE DEAF
Frederick, Maryland 21701

DAVID M. DENTON, Ed.D.
Superintendent

November 5, 1976

Dear Parent:

We need your opinion on some matters which may be very important to your child's future. Howard Community College is conducting a study of the needs of deaf people for education after graduation from a high school program. Right now, college and job training programs for deaf people are extremely limited in Maryland. Before we can develop services for deaf students, we must find out what their needs are.

Within a week, you will receive a short questionnaire and a stamped envelope addressed to Mr. Shellem at the Maryland School for the Deaf. The questionnaire asks you to give your opinions on various topics related to your child's education after he or she graduates from M.S.D. It does not ask your name or your child's name.

Please fill out the questionnaire and mail it before November 21, 1976. Thank you very much for helping with this study.

Sincerely,

Judy Athey
Project Coordinator

David M. Denton
Superintendent

DMD/JA:eec

MARYLAND SCHOOL FOR THE DEAF
Frederick, Maryland 21701

DAVID M. DENTON, Ed.D.
Superintendent

November 10, 1976

Dear Parent,

This brief questionnaire asks you for some of your opinions on your child's need for education after he or she graduates from Maryland School for the Deaf. It will help us plan college and job training programs which meet the needs of deaf people.

The first part asks some general information. Please answer every question. In the second part, check the answer or answers which are most like your opinion. We welcome any additional comments you may have.

When you have completed the questions, please mail the questionnaire before November 21, 1976 in the stamped, addressed envelope provided for your convenience.

All information will remain strictly confidential; please note that we are not asking your name.

Thank you very much for your help.

Sincerely,

Judy Athey
Project Coordinator
Howard Community College

David M. Denton
Superintendent

DMD/JA:eeč

Enclosures

Part I

A. How old is your deaf child? _____

B. In which county (or Baltimore City) do you live? _____

C. Are you deaf? _____ Are you hard-of-hearing? _____

Part II

Check the response wchich is most similar to your opinion.

A. Do you think your child should receive more education after graduation from high school?

_____ Yes

_____ No

_____ No Opinion

B. In your opinion, what kind of education should your child receive?

_____Basic Education (language, reading, math, etc.)

_____Job training (vocational-technical)

_____4 year college (Bachelor's degree)

_____2 year college (Associate of Arts degree)

_____How to live on his/her own (independent living skills)

_____Other: (Please list) _____

C. If you had a choice of colleges or vocational schools, where would you want your child to attend? Please write the name of your first, second, and third choices of colleges and/or vocational schools.

First Choice: _____

Second Choice: _____

Third Choice: _____

D. What kind of job would you like to see your child choose for a career?

_____

E. What kind of job would your child like to choose for a career?

_____

F. Has your child shown any interest in continuing his/her education after graduating from MSD?

_____Yes

_____No

_____Don't Know

_____Child is Undecided

_____Other (Please explain): _____

OTHER COMMENTS: _____

_____

_____

_____

APPENDIX D

Interview Materials for Interviews with Deaf People

November 17, 1976

Dear

Enclosed are the interviewing materials which I described to you previously: 1) notes for interviewers, and 2) copies of the interview form. Please read both carefully and please call me before you begin to interview people. I need to be sure that you are clear about what to do.

Thank you very much for your willingness to help. We hope that this survey will help alleviate the common problem of deaf people not being asked their opinions on matters important to them. You are performing a vital service.

Please return ten completed forms to me by December 20. At that time I will send you a form to sign so that you can be paid for your services.

Thank you again.

Sincerely,

Judy Athey, Project Coordinator
Feasibility Study of Postsecondary Programs
for Deaf Students

JA/va

howard community college

Columbia, Maryland 21044
1-301-730-8000
992-4830

FEASIBILITY STUDY OF POSTSECONDARY EDUCATION FOR DEAF STUDENTS

Notes for Interviewers

As an interviewer, you are very important to this study. Please read these suggestions carefully, and if you have any questions, please call me at the above phone number. Thank you very much for helping.

1. Choosing deaf people to be interviewed:

Because there is no registry of deaf people in Maryland, there is no way to get a truly random sample. Also, since we do not have information on the reading and math achievement levels of all deaf people, we cannot choose our subjects according to this variable. Therefore, it is up to the interviewer to attempt to balance the group of people interviewed.

Age: Interview people age 16 and older, and try to get a variety of ages.

Education: Do not interview more than one Gallaudet graduate out of your ten subjects. A large number of graduates would make it seem that the deaf population in Maryland has had much more education than is really the case. Interview people of various educational levels.

Occupation: Try to interview people of various occupations and some unemployed people.

Location: Within your geographic area, try to get some people from different parts of your county or large city.

Sex: Try to get a reasonable balance of males and females.

Personality: Do not interview only outgoing people; try to get some people who do not usually speak out.

Of course, you will not be able to meet all of these, but do your best to get a representative group.

2. Introduction

Before beginning the actual interview, explain that you are helping with a study that wants to find out deaf people's feelings about getting more education after graduating from high school. Let the person know that many deaf people throughout Maryland will be interviewed.

Notes for Interviewers - 2

3. Using the Interview Form:

Please write clearly and be sure that your phrases would be understood by another person reading them. If you have any comments about the interview, please write them on the back. For example, if it was clear to you that the subject did not understand the questions, you would indicate this on the back.

4. Potential Problems in Interviewing:

Question #1 (Do you think most deaf people want more job training, vocational education, or for community colleges to be more open to deaf people in Maryland?): Find out the person's opinion on each issue separately, because his or her feelings may be different for each. For example, the person may feel that more job training is necessary but community college services are not necessary. Therefore, ask about job training, then vocational education, and then community colleges.

Question #2 (Do you think you might want to go to school to take any kind of courses?): When giving the interview, you may or may not find that the person does not know what options could be open to him or her in a community college or vocational center. People who have been denied access to postsecondary education may have no way of knowing whether they would want it.

If this happens, explain what is meant by postsecondary. Be careful not to be selling the idea. Sometimes subjects will give an answer just because they think it will please you. If an answer is suspect, ask the person why they want to take that subject. It is very important that you give only facts, not your own opinion.

Using the subject's preferred means of communication, you could explain the following to him or her:

> After finishing high school, after graduating, many hearing people go to college. Some go for four years, some for two years, some for a short training course. There are many kinds of schools and many ways for hearing people to get training. Some hearing people want to learn more so that they can try to get a better job, or more pay. Right now, if a deaf person wants to go to college, he or she can't. The deaf person is stuck.
>
> Suppose this changes, and in the future, colleges have interpreters, couselors for deaf people, notetakers, and other services. Do you think you might want to go to college or to a vocational center to take courses?

More or less explanation will be necessary, depending on each person.

When asking what courses the person would like to take, try to get as specific an answer as possible. For example, if the response is "job training", ask "For what job?" If the response is "Business", probe to find out the specific occupation that the person has in mind. "Business" could be anything from a typist to a bank president.

HOWARD COMMUNITY COLLEGE - FEASIBILITY STUDY OF
POSTSECONDARY EDUCATION FOR DEAF STUDENTS

NAME _____

AGE _____

CITY OR COUNTY OF RESIDENCE _____

1. Do you think most deaf people want more job training, vocational education, or for community colleges to be more open to deaf people in Maryland?

2. (Preface this question with explanation of options available)
Do you think you might want to go to school to take any kind of courses?

   a. If yes, what would you take? (Try to find all areas of interest)

   b. If no, why don't you want this type of program yourself?

3. What services should a hearing college give so that deaf people could go there and be comfortable learning among hearing people?

4. Where should a program be located so that most deaf people could benefit?

_____
Interviewer's Name

_____
Date

APPENDIX E

Postsecondary Programs for Deaf Students - Feasibility Study

Advisory Committee

Mrs. Ruth Brown, Staff Specialist
Maryland State Dept. of Education
Division of Vocational Education

Mr. Frank Bryan, Principal
Maryland School for the Deaf
Columbia Campus

Ms. Norma Buemi, Vocational
Rehabilitation Counselor
Division of Vocational Rehabilitation

Mrs. James Clark, Jr.
Parent and Community Member

Mr. Edward E. Corbett, Jr.
Asst. Superintendent
Maryland School for the Deaf

Dr. David M. Denton, Superintendent
Maryland School for the Deaf

Mr. Joseph P. DeSantis
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Mr. Ron G. Frank
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Mrs. Bernice Hoeper, Director
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Mr. Edward T. Kilcullen, Consultant
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Dr. Leonard Siger
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Baltimore City Dept. of Education

Mr. James S. Smith
Associate Dean of Instruction
Howard Community College

Mrs. Jackie Stover, Liaison Worker
Baltimore City Public Schools

Dr. McCay Vernon, Professor
Western Maryland College

Ms. Judith R. Williamson
Extension Agent
University of Maryland

Ms. Anne Marie Zalewski,
Faculty Member
Howard Community College

APPENDIX F

Definitions

The Conference of Executives of American Schools for the Deaf, an organization of directors of schools and programs for the deaf, has developed definitions of the following terms:

Hearing Impairement. A generic term indicating a hearing disability which may range in severity from mild to profound: it includes the subsets of deaf and hard of hearing.

A deaf person is one whose hearing disability precludes successful processing of linguistic information through audition, with or without a hearing aid.

A hard of hearing person is one who, generally with the use of a hearing aid, has residual hearing sufficient to enable successful processing of linguistic information through audition.

Implications of Manpower Research In Postsecondary Education for Deaf Students In Maryland

Judy Athey, Project Coordinator
Feasibility Study in Deafness
Howard Community College, Columbia, Maryland

IMPLICATIONS OF MANPOWER RESEARCH IN POSTSECONDARY EDUCATION FOR DEAF STUDENTS IN MARYLAND

The Need

Before recommending an appropriate site for a postsecondary program for deaf students, some general information on manpower needs must be analyzed. Based on demand projections and the deaf person's capabilities, certain occupational training areas can be recommended as having good post-graduation employment potential. Selection of an institution or institutions to serve deaf individuals will depend in part on the occupational training offerings of the institution(s) in question. Deaf people will be best served by those community colleges which offer the most programs having good employment prognoses.

If not used properly, recommendations of training areas could ultimately serve to limit opportunities for deaf people. It is very important that this danger be recognized and avoided by the postsecondary institution serving deaf students. The purpose of this analysis is merely to help prevent program failure which might result from the selection of an inappropriate setting for a program. It is not intended as a guide to the occupations deaf people can master, as these are virtually limitless.

The site for a program for deaf students should offer a variety of occupational training programs, so that the individual will not be stereotyped in a few programs.

Objectives

The objectives of this report are:

1. To describe the job market as faced by the deaf person, the limitations it places on him or her, and its implications for selection of a career.
2. To list state and national manpower projections for the 1980's.
3. To list occupations which require training of two years' duration or less, and which are not dependent upon hearing.
4. To report vocational rehabilitation counselors' opinions on desirable occupational training subjects for deaf clients.
5. To synthesize the above information and make recommendations concerning curricular offerings of postsecondary programs for deaf students based on the information.

Deafness and the Job Market

The deaf job seeker faces more barriers to employment than does the hearing job seeker. These barriers, which will affect the employment potential of postsecondary students, must be considered in designing a program for them.

Negative employer attitude is a major barrier to the deaf person's search for a job. Part of employers' resistance may be due to a lack of knowledge of the handicap of deafness and its implications. Some employers may simply not want to be bothered, even if they are aware of the handicap. Still others feel psychologically threatened by people with physical

disabilities. They may reject a person with whom they feel awkward due to communication difficulties.

Some manifestations of negative attitudes take the form of reasons given by the employer for denying employment to the deaf applicant. One such reason is the employer's insistence that insurance rates will rise, or that the firm's insurance may be cancelled if a deaf person is hired. Deaf employees have better safety records than the average for hearing employees (Williams, 1970), but insurance companies may in fact threaten to charge higher rates for employers of deaf or other disabled people. If this is the case, the practices of the insurance company should be changed. It is possible, on the other hand, that employers use this excuse because they know it is a difficult point to dispute. In either case, there is need for attitudinal change before deaf people will be equitably considered for "hazardous" occupations.

Another reason given for not hiring deaf workers is that the ability to hear is essential for the position in question. The importance of hearing tends to be viewed out of proportion to its real relation to the task at hand. An illustration is the tendency of the person who is unfamiliar with deafness to ask, "Can deaf people drive?" Unfortunately, few deaf people and vocational rehabilitation counselors have a sufficient knowledge of the tasks performed in various jobs to debate their relationship to a client's hearing loss. This particular attitude has long-term effects on deaf people who are hired, since they are less likely to be promoted than their hearing co-workers (Silver, 1970). Employers are

reluctant to place a person with a communication handicap in a supervisory role. There is a need for task analyses of the wide variety of jobs on the market, so that employers can be challenged as to the job-relatedness of a normal hearing requirement.

Written tests. Deafness is not only an auditory handicap, but a language and communication handicap as well. Reading levels of deaf people are lower than those of the general population, despite a normal intelligence distribution.

For this reason, it is common for a bright deaf person who has mastered the skills of an occupation to be barred from employment because of a low score on a written examination. One ramification of the problem is that deaf people often have difficulty in acquiring licenses or union membership when a written test is required.

Affirmative action laws require that those businesses and agencies contracting with the federal government screen employees only for job related traits. For example, women could be denied employment as attendants in men's rest rooms, and profoundly deaf people could be denied employment as piano tuners, because they do not have the job-related requirements for these positions. Much litigation in the next several years will undoubtedly focus on this issue of job-relatedness, and certain written examinations may be altered or eliminated as a result. However, until this happens, many deaf people could conceivably train for an occupation and then be unemployable.

Therefore, the written testing requirements of occupations must be

considered when counseling deaf clients regarding their career choices.

Apprenticeship. In the State of Maryland, competition for apprenticeships is very keen. There are currently 3,800 registered apprentices in Maryland, and there is a long waiting list. Pre-apprenticeship screening involves the administration of some sections of the GATB (General Aptitude Test Battery) and students who score below a sixth grade reading level are counseled that they may have difficulty in passing the written test requirements prior to granting a license. This reading level requirement would be prohibitive to many deaf people who are otherwise well suited to the trade in question.

Labor Supply. The manpower demand which will be described in this report is only part of the manpower market. Manpower supply also affects the degree of competition for jobs. Unfortunately, supply is a very complex variable to measure, involving such factors as mobility, mortality, availability of training programs, and career change. Since the Bureau of Labor Statistics, Department of Labor is just beginning its effort to measure supply, information is not available at the present time.

However, some assumptions will be made based on studies of employers' practices and attitudes. In general, deaf people are at a disadvantage in a competitive job market, and as a consequence, should be at least as well trained as hearing people when applying for a position or promotion (Klein, 1970).

Rectifying the Situation. Enforcement of affirmative action legislation requires litigation, a long and expensive process. Handicapped

people have a long way to go before achieving the status of an organized minority. Their numbers are small; the recognition of their rights is a recent occurrence, and they are an extremely diverse population, with the needs of one group of handicapped citizens sometimes conflicting with the needs of another group.

These factors interact to cause slow improvement in the status of the rights of handicapped people. Consequently, the implications of all forms of job discrimination may be viewed as an unfortunate reality for the near future, and postsecondary programs for deaf students must be designed accordingly.

Underemployment. Professionals in the field of deafness often speak and write about deaf people being employed in jobs below their abilities. Is underemployment really a problem?

The following chart illustrates the employment of deaf persons. Percentages for the deaf population, taken from the 1972 National Census of the Deaf Population (Schein and Delk, 1972, p. 84) describe the deaf work force in the southern United States. The large numbers of deaf people employed professionally by Gallaudet College and the Maryland Schools for the Deaf may inflate the percentage of those employed professionally (9.0%). This figure is probably an overestimate of the professionals in general deaf population. The percentages for the general population are derived from the Bureau of Labor Statistics estimates of numbers employed in the overall work force of the United States, by occupational category.

Table 1

Employment of General Population vs Employment of Deaf Population

Occupation	Percent of general work force employed in this occupational category	Percent of deaf work force employed in this occupational category
Professional and technical	14.3	9.0
Managerial and administration	10.4	1.9
Sales	6.3	.3
Clerical	17.5	19.6
Craftsmen	13.4	22.0
Operatives, transit and non-transit	16.2	32.2
Laborers, non-farm	5.1	6.8
Farm workers	3.6	2.1
Service workers	13.3	6.0

The table shows that deaf people are under-represented in professional, technical, managerial, administrative, sales, and service occupations. They are extremely over-represented in craftsmen and operatives occupations. It is not known whether these differences are due to placement in jobs below deaf people's training and capabilities. An inadequately trained population of deaf workers could account for some of the imbalance.

National and State Manpower Projections, 1974-1985

National Trends in Manpower Demand. Information on national trends in manpower demand is available in the 1976-1977 Occupational Outlook Handbook, a publication of the Department of Labor, Bureau of Labor Statistics.

At present, approximately one-third of the labor force is devoted to production work, and two-thirds are employed in service producing industries, such as education, health care, trade, repair and maintenance, government, transportation, banking, insurance and utilities.

Such service occupations will grow at a rapid rate into the 1980's, whereas production will grow at a slower rate. Growth in white collar occupations will outpace that of blue collar occupations. The number of openings in agriculture will decline. The occupations of salesworkers, operators, and laborers will experience slow growth; openings for crafts workers, managers, and professional workers will grow at an average rate; and clerical and computer workers will grow at the fastest rate. Rate of growth is not the only demand factor to be considered, however. Large occupations with slow growth rates may offer more openings than fast growing small ones. Thus, size of the labor force in each occupation must be considered.

In general, jobs will become more complex and the variety of jobs being done will be greater. Consequently, the training needs of the work force will increase. The Occupational Outlook Handbook states, "Getting as much education and training as one's abilities and circumstances permit should therefore be a top priority of today's youth" (DOL, 1975, p. 16).

State Trends in Manpower Demand. State manpower projections for 1974-1985 are available from the Research and Analysis Division of the Maryland Department of Human Resources. Projection procedures used were developed by the Bureau of Labor Statistics, United States Department of Labor.

Although there will be a shift toward employment in non-manufacturing industries, industrial trends for Maryland indicate no major changes in the eleven industry division (manufacturing of durable goods; manufacturing of non-durable goods; agriculture; forestry and fisheries; mining; construction; transportation and other public utilities; wholesale trade; retail trade; finance, insurance and real estate; services; and government). An analysis of the growth of occupations by percentage shows the following occupations as the fastest growing:

Table II

Ten Fastest Growing Occupations by Percentage (1974-1985) Projection

Occupational Category	Projected 1974-1985 Employment Growth by Percent
Health Technologists and Technicians	73.18
Health Service Workers	68.52
Computer Specialists	65.33
Technicians, excluding health	59.41
Mathematical Specialists	55.83
Cleaning Service Workers	47.71
Stenographers, typists, secretaries	47.44
Buyers, sales, loan managers	41.49
Social Scientists	41.14

However, as mentioned previously, size of the labor force in each category is a crucial variable. Growth in terms of projected numbers of job openings for the 1974-1985 period is very different and is probably a more relevant measure for the purposes of this report. The following table lists the twenty five occupations having the largest additional numbers of openings between 1974 and 1985.

Table 3

Twenty Five Occupations with Greatest Projected Growth by Numbers of Job Openings (1974 - 1985)

Occupational Category *	Projected 1974-1985 Employment Growth. Number of New Openings.
All other clerical workers	70,650
Stenographers, typists, secretaries	44,600
Sales workers	31,200
All other managers, officials, proprietors	27,000
Construction crafts workers	26,850
All other professional, technical	23,750
Health service workers	18,500
Medical workers, excluding technicians	18,200
Food service workers	18,050
Cleaning Service workers	16,550
Mechanics, repairers, installers	16,100
Buyers, sales, loan managers	12,450
Personal service workers	9,900
Operatives, excluding transportation	9,500
Writers, artists, entertainers	8,700
Laborers, except farm	8,650
Engineering and science technicians	7,700
Teachers	7,650
Protective service workers	7,600
Administrators, public inspectors	6,950
Computer specialists	6,950
Engineers, technical	6,350
Transportation equipment operatives	5,900
All other operatives, excluding transportation	5,600
Health technologies and technicians	5,350

* Occupations which are included in each category are listed in appendix B

Appropriate Occupations: An Analysis

The Occupational Outlook Handbook describes more than 850 occupations with regard to (1) the nature of the work, (2) places of employment,

(3) training, other qualifications, and advancement, (4) the employment outlook, (5) earnings, and (6) working conditions. Occupations described in the Occupational Outlook Handbook cover about 95% of all salesworkers, 90% of all professional, craft, and service workers, 80% of clerical workers, 50% of all operatives, and less than 50% of managerial workers and laborers. Of the last two groups, laborers do not require post-secondary education. Therefore, for the purposes of this report, only some operatives and managerial occupations are under-represented in the Occupational Outlook Handbook.

In making the initial determination as to each occupation's suitability for consideration as areas for postsecondary training, several criteria were used. First, if no training is required for employment, that occupation was eliminated. In these occupations, employers use short term on-the-job training where necessary.

Second, if the training required for an occupation exceeds the scope of the vocational center or community college, that occupation was eliminated. Because there are excellent national programs for deaf students who wish to take liberal arts or high level technical training, the focus of this analysis will be training of less than four years.

Third, if an occupation is heavily dependent upon hearing, it was eliminated. This is a very difficult judgment to make; deaf people are engaged in all kinds of employment, and some could function in these occupations. For example, where extensive use of the telephone is necessary, an assertive deaf person could negotiate for a secretary who

would interpret telephone conversations to him/her. However, a deaf person trained in a field which depends heavily on the use of the phone (such as bill collection) would face a very resistant job market. Chances of employment would be greatly diminished by employer attitude.

Few occupations were eliminated because of the handicap. Examples of these occupations include piano tuners, stenographers, receptionists, and insurance claim representatives. It must be reiterated that no occupation can be automatically ruled out simply because a person has a hearing impairment. However, training priorities must be set for postsecondary programs that will result in a high probability of employment for deaf graduates.

The fourth criterion leading to elimination of an occupation is whether the industry currently practices discrimination by law. For example, truck driving is a viable occupation for deaf people, but at present requirements for this occupation exclude the deaf person solely on the bases of hearing loss. In general, occupations in law enforcement and in the armed forces are closed to deaf individuals on a similar grounds. Until these rules are changed, there is little logic in preparing the deaf applicants to enter these occupations.

Finally, job availability information influenced the elimination of some occupations. If competition would be keen in an occupation, employing a small workforce, that occupation was removed from the priority occupation list.

The groups of occupations below are described in depth in the

Occupational Outlook Handbook to which the reader is referred for more detailed information. Also, Appendix C of this paper lists occupations which were not eliminated by the criteria cited above and not excluded based on these five criteria.

Office Occupations included clerks, bookkeepers, office machine operators, secretaries, statistical clerks, computer keypunchers, and computer operations workers. According to the Occupational Outlook Handbook, employers are increasingly insisting on a BA dgreee for computer programmers.

An appropriate Banking Occupation was that of bank clerk. The others listed required no training (teller) or four years of training (manager trainee).

Insurance Occupations were cited as requiring the BA, with the exception of claim representatives. Because of the heavy use of the phone and necessity for public contact this occupation was not recommended. However, the insurance industry does employ a large number of clerks, secretaries, and other office workers.

Administrative and related occupations were listed as requiring at least a bachelor's degree in almost all cases. However, some advertising workers and some accountants could be exceptions to this trend. Because there is a great need for training of deaf people in mid-level management because of the underemployment problem, some general managerial or administrative training should be available for those workers with sufficient experience but insufficient training to move up.

Most of the general services occupations do not require training.

In protective and related service occupations (police and security), the deaf person would probably face a resistant employer, since police, FBI agents, and firefighters have stringent physical requirements which usually include normal hearing.

Education Occupations listed required advanced education, with the exception of library assistant. (However, teacher aides and tutors were not mentioned, and these are possible occupational training opportunities).

Most sales occupations required only on the job training by employers rather than two-year occupational training. A possible exception is the occupation of auto service advisor, which requires training and experience.

Many construction occupations are ideally learned via apprenticeships, and some others, such as laborers, do not require occupational training. Although there is not a large number of apprenticeships in Maryland, there are other opportunities for those who wish to train for many of these areas. Community colleges and vocational centers offer a variety of construction trades in their occupational training curriculum. Construction trades listed in the Occupational Outlook Handbook include bricklayers, stonemasons, carpenters, cement masons, construction electricians, elevator mechanics, glaziers, lathers, joiners, paperhangers, plasterers, roofers, sheet metal workers, and ironworkers.

Transportation occupations present a variety of problems. Air transportation workers such as air traffic controllers and pilots need good hearing. Many other transportation occupations are found in industries with poor prospects, such as merchant shipping and railroad employment. Driving occupations require no training or may be barred due to interstate regulations.

Forestry occupations require bachelor's degrees, with the exception of forestry technicians.

Under the heading of Other Scientific and Technical Occupations, there were a large number of occupations which require training appropriate for a two year program to provide, which have good employment prospects, and which do not depend upon hearing ability. The list is quite long and varied but some examples are electronic technician, meterological technician, and surveyor.

Mechanics and repairers do a variety of jobs which require training, but not hearing. Examples include watch-jewelry repairing, automobile mechanics, and air conditioning, refrigeration, and heating repairers.

A fast growing field of employment is that of health occupations. Paraprofessional occupations can be taught at two year institutions. Among the job titles included are dental assistant, electro-encephalographic technician, and medical lab worker.

Professional fields in science, counseling and rehabilitation require four years or more of education, but many of these professions are now looking to paraprofessional assistants to perform more routine duties.

Finally, design industries have a limited number of occupations which do not require four years of training. Competition is becoming keener as more four year college graduates enter this area. Photography, a high interest training area for many deaf students, is becoming increasingly competitive.

The Perspective of the Vocational Rehabilitation Counselor

Vocational rehabilitation counselors who serve a primarily deaf caseload have learned from hard experience the problems encountered in placing their clients. They have talked with clients about career aspirations and have attempted to provide services to help deaf clients select a feasible career and reach their goal of employment.

Because of their expertise in rehabilitation, eight vocational rehabilitation counselors with responsibility for deaf clients in their areas were interviewed. They were asked what occupational training curricula would be most suited to deaf people, not as a limiting factor, but as a guideline for new postsecondary programs.

None of the counselors had immediate or strong reactions to this question. A possible reason for this lack of immediate response is that these counselors are familiar with the capabilities of deaf people, and are not accustomed to thinking of them as a group which is ideally suited for a limited number of occupations. After some consideration, half of the counselors mentioned clerical or business office training; three mentioned health technologies, such as dental lab technician and medical assistant;

three mentioned computer-related fields such as data processing; two mentioned mechanic trades; other occupations listed by individual counselors included industrial sewing, locksmithing, lens grinding, commercial art, and construction trades.

The three occupational areas most often mentioned by counselors happen to be ones in which projected growth is expected to be faster than average, according to the Occupational Outlook Handbook. State of Maryland projections favor these occupations as well.

Summary and Recommendations

A community college, vocational center or other institution intending to serve deaf students should offer a wide range of occupational training so that deaf people can be flexible in their choice of careers while taking advantage of suitable support services.

Priority should be given to occupations which have favorable employment projections for the next ten years; which require training such as a community college or vocational center might offer; which have relatively few chances of discrimination against the deaf applicant; and which are not dependent upon hearing. Based on these criteria, it is recommended that a college or vocational center serving deaf clients offer:

1. A variety of office occupations, including clerical, secretarial and executive secretarial training.
2. Management and supervisory training to help alleviate the underemployment problem.

3. A variety of computer-related occupations.
4. Training for mechanics, repairers and installers.
5. Offerings in health service fields, including technicians.
6. Construction crafts training.
7. Training for engineering and science technicians.

Further Research. A career counselor in a community college, vocational center, or rehabilitation setting should be aware of entrance requirements for occupations before counseling the deaf student. When written tests are required the reading level of the test should be known. Task analyses for occupations should be available so that the counselor and student or client can judge the advisability of training for that career. Often, minor changes in a work routine or the removal of a telephone can alter the job so that it no longer presents a barrier to a deaf person's employment. However, without a rather comprehensive knowledge of the job, the counselor may not realize what modifications can be made. Research in the field should include:

1. An analysis of written requirements for licenses, union admission, and job entrance to some large occupations.
2. Task analyses of jobs and the relation of these tasks to hearing impairments.
3. A survey of noise related occupations, which are ideally suited to many deaf people.

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